

AMENDMENT TO THE CLAIMS

Claims 1-12 (Cancelled)

13.(New) A component mounting head in which a component is sucked and held and the sucked-and-held component is placed at a component mounting position in a board and then the suction and holding of the component is released, by which the component is mounted onto the component mounting position, the head comprising:

a suction nozzle including a suction-and-holding face for sucking and holding the component, the suction-and-holding face having a suction hole portion which is integrally formed of a generally circular-shaped hole portion formed with an axial center of the suction nozzle, and a plurality of end-portion extended portions formed by partly extending end portions of the circular-shaped hole portion in five radial directions thereof so as to extend in an identical configuration along the five directions radially arranged from the end portions of the circular-shaped hole portion at a generally uniform angular pitch, and which serves to suck up the component being in contact therewith.

14.(New) The component mounting head as defined in claim 13, wherein
the suction nozzle is enabled to suck and hold at a component extraction position, each of components fed from a component feed cassette in which a plurality of the components are accommodated and which feed out the accommodated components along a component feed direction so that the components are positioned at the component extraction position so as to be

feedable, and

the suction nozzle is equipped with the component mounting head so that the component feed direction of the component feed cassette is made coincident with an extending direction in which one of the end-portion extended portions is extended.

15.(New) The component mounting head as defined in claim 14, wherein in the suction nozzle, the suction hole portion has a configuration that satisfies a relationship that given a hole diameter d of the circular-shaped hole portion, a diameter of an outer circumferential end portion of the suction-and-holding face is approximately $3d$, a width of each of the end-portion extended portions is approximately $0.4d$, and a diameter of an imaginary circle interconnecting outer ends of the respective end-portion extended portions is approximately $2d$.

16.(New) The component mounting head as defined in claim 13, wherein the suction nozzle comprises:

a projecting member which is inserted and placed within the generally circular-shaped hole portion, for sliding between an accommodated position where a tip end portion of the projecting nozzle is positioned inner than the suction-and-holding face, and a projective position where the tip end portion is projected from the suction-and-holding face; and

a biasing member for normally biasing the projecting member toward the projective position.

17.(New) The component mounting head as defined in claim 13, wherein the tip end portion of the projecting member is formed from a semiconductor ceramic.

18.(New) The component mounting head as defined in claim 15, wherein the suction-and-holding face of the suction nozzle is surface finished so as to have a multiplicity of depressed/projected portions having heights or depths of about 10 to 20 μm .

19.(New) The component mounting head as defined in claim 16, wherein the multiplicity of depressed/projected portions are recess portions which are formed in the suction-and-holding face so as to make the suction hole portion and an outer circumferential end portion of the suction-and-holding face communicated with each other.

20.(New) The component mounting head as defined in claim 13, further including an auxiliary suction member which is formed from an elastic material and which has an inner circumferential end portion placed in close contact with an outer circumferential portion of the suction nozzle, and an outer circumferential end portion formed so as to project outward of a circumferential portion of the suction-and-holding face and placed at a position generally equal in height to the suction-and-holding face or slightly backward of the suction-and-holding face.

21.(New) The component mounting head as defined in claim 20, wherein the suction nozzle includes an auxiliary suction member fitting portion which is set at an outer circumferential

portion thereof so that the inner circumferential end portion of the auxiliary suction member is attached thereto detachably therefrom, and the auxiliary suction member is selectively attached to the auxiliary suction member fitting portion depending on size of the component to be sucked and held.

22.(New) The component mounting head as defined in claim 21, further including
a fixing member for loading the auxiliary suction member to the auxiliary suction member fitting portion by releasably fixing a contact position of the inner circumferential end portion of the auxiliary suction member against the auxiliary suction member fitting portion, wherein

a height position of the outer circumferential end portion of the auxiliary suction member is adjustable by adjusting the contact position, the contact position being to be fixed by the fixing member, in a direction extending along the axial center of the suction nozzle.

23.(New) A method for manufacturing a suction nozzle included in a component mounting head for sucking and holding a component and placing the sucked-and-held component to a component mounting position in a board and then releasing the suction and holding of the component to mount the component onto the component mounting position, the method comprising:

preparing a metal mold in which numerous hard particles are fixed at a portion corresponding to the component suction-and-holding face in the suction nozzle; and

molding the suction nozzle by injecting a semiconductor ceramic into the metal mold so that a multiplicity of depressed/projected portions corresponding to the individual hard particles are formed in the suction-and-holding face.

24.(New) The method for manufacturing a suction nozzle as defined in claim 23, wherein
in preparing the metal mold, the metal mold which is formed by electrodepositing the hard particles containing diamond particles having diameters of about 10 to 20 μm at sites corresponding to the suction-and-holding face is prepared, and
in molding the suction nozzle, the depressed/projected portions are formed in the suction-and-holding face so as to have heights or depths of about 10 to 20 μm .